SOUTH CAROLINA Energy Office

The Energy Connection

State Budget and Control Board Winter 2007

Solar Pavilions at Coastal Carolina University.

Coastal Carolina's Solar Green Power Site Makes History

Santee Cooper and Coastal Carolina University officially unveiled South Carolina's first Solar Green Power site on October 31. The project consists of solar photovoltaic panels atop four new multi-purpose pavilions on Conway's East Chanticleer Drive, a major campus thoroughfare.

The $385,000 project is capable of producing 16 kilowatts, which is enough to supply power to more than 75 personal computers. The installation includes monitoring equipment that produces real-time statistics on how much electricity is being generated at any moment. A nearby internet-linked kiosk provides site-performance data and additional renewable energy information.

"Today is a historic day for South Carolina. There are many firsts: the state's first solar Green Power site; the first solar PV project at a public university in the state; and the first project funded by Green Power participants," said Lonnie Carter, President and Chief Executive Officer for Santee Cooper. The pavilions are the most recent part of Santee Cooper's strategy to promote renewable energy and to fulfill its commitment to reinvest Green Power funds back into renewable resources throughout the state.

South Carolina Energy Office
1201 Main Street, Suite 430
Columbia, South Carolina 29201
(803) 737-8030
1-800-851-8899
www.energy.sc.gov

Homegrown Fuel Can Grow South Carolina

Hugh Weathers,
SC Commissioner of Agriculture

South Carolina sometimes finds itself at the top of bad lists or the bottom of good lists. On the good "list" of who is proactive about alternative fuel development, I am happy to report that our state is near the top. In fact, South Carolina is one of the first to step up to the plate to reduce foreign oil dependency. With the rise in gas prices and continued instability in the Middle East, this is definitely a list to be on.

In the 2006 session, the South Carolina General Assembly followed the lead of The Federal Energy Policy Act of 2005 when it created economic incentives for producing, purchasing, and selling renewable fuels. Now, if you buy an E85-capable (85% ethanol, 15% gasoline) flex-fuel vehicle, you are eligible for a $300 sales tax rebate on thevehicle. Income tax credits are available for production of ethanol and biodiesel fuel. And, petroleum marketers are eligible for a rebate of 5 cents per gallon for E85 and B20 fuel when priced below conventional products.

The legislation establishes a seven-member policy group named STREIC (Strategic and Tactical Research on Energy Independence Commission) that will make recommendations in January 2007 to the Governor and General Assembly on the state's existing and potential alternative fuel policies. As Commissioner of Agriculture, I will serve on this commission which will analyze South Carolina's strengths and opportunities in the long-term development of alternative fuel production.

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Guerilla War on Biofuels Is Off-Base

John Clark,
Director, SC Energy Office

America's addiction to oil causes three basic problems:

- Our environment is trashed;
- Our economy is weakened;
- Our security is endangered.

Solutions fall into two categories:

- Use less transportation fuel;
- Use transportation fuel not made from oil.

We cannot simply choose between the two solutions – we must do both. We must be more efficient, and we must propel our vehicles in some way other than by burning oil.

Some petroleum interests, which successfully fought off energy efficiency for the last two decades, have now turned their guns on biofuels, the most available substitutes for oil: ethanol to replace gasoline and biodiesel to replace diesel. (About two-thirds of our transportation fuel is gasoline, and one-third is diesel; in Europe, these percentages are reversed.) Through skillful, well-financed public relations efforts, some petroleum interests have been able to plant seeds of doubt among unlikely allies: environmental protection advocates.

These seeds of doubt are unfortunate and off-base. Here's why:

- Ethanol and biodiesel produce far less greenhouse gases and other harmful emissions, compared to gasoline and diesel.
- Ethanol and biodiesel are biodegradable and not susceptible to harmful spills and contamination of water, as is petroleum.
- Tax subsidies for ethanol and biodiesel are dwarfed by tax subsidies for oil.
- We don't need to spend billions of dollars to protect ethanol and biodiesel supplies.
- Biofuels do not present a food versus fuel conflict because the same corn used for ethanol and soybeans used for biodiesel are also used for animal feed, through use of the residue after sugars and oils are removed.
- Very soon, reasonably-priced ethanol will be made from switchgrass, wood waste and other cellulosic materials, and biodiesel will be made from high-yield energy crops and algae developed exclusively for fuel production.
- South Carolina can produce biofuels, which will keep money in our state. Oil purchases benefit people elsewhere and drain our economy.
- Biofuels are only a partial solution, but so are conservation measures and additional domestic oil production. Combined, however, the partial solutions will go a long way toward solving our problems.

Right now, biofuels are good for South Carolina's economy, good for South Carolina's environment, and good for South Carolina's energy security. In the future, the benefits will only increase. It's time to roll.

SC Biomass Council Report Issued

The SC Biomass Council was established in April 2006 to develop a long term strategy to make biomass energy a feasible large-scale alternative to petroleum based products. The Council's objective is to make biomass energy a feasible, large-scale alternative for South Carolina. This means encouraging innovation, attracting new investors, and providing incentives for greater use of biomass.

Dr. Nick Rigas, Director of Clemson's Institute for Energy Studies, chairs the Council, whose members include entrepreneurs, growers, producers, state and federal officials and academic researchers. Each of the five committees -- solid, liquid, and gaseous biomass fuels, public policy & incentives, and alternative biomass products—has welcomed anyone interested in participating, bringing even more expertise to bear on the Council's work.

At its January 19th meeting, the Council finalized its report which addresses both transportation fuels and the production of electricity and natural gas. Among the recommendations are incentives for the production of electricity and gas from biomass such as wood chips, animal waste and sewage sludge. The Council also recommended incentives to encourage greater production and use of biodiesel and ethanol in transportation. Since biomass can also be used to manufacture substitutes for plastics and other materials currently made from petroleum products, the report encourages the development of "bio-products" as well. Taken together, the recommendations will provide new markets for South Carolina's agricultural products, and new outlets for local entrepreneurs.

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Biomass Council, Continued from Page 2

Although the Council's initial report is complete, it will continue to serve as a resource for the general public and decision-makers, helping to publicize existing biomass projects and encourage new investment. Members of the Council will work with the General Assembly to turn recommendations into law.

The Biomass Council's website, www.scbiomass.org, contains a wealth of information about the state's potential for biomass energy and products, a directory of producers, activity in other states, existing and proposed legislation, and current news. If you know of a new development, please share it with Erika Hartwig, at ehartwig@energy.sc.gov. If you are interested in learning more about the Council and its work, please visit the website or contact Richard Horton at 803-737-8034 or rhorton@energy.sc.gov.

Homegrown Fuel, Continued from Page 1

Since it's baseball season, renewable fuel can be compared a grand slam homerun for South Carolina* scoring on four accounts.

Our state's farmers will have new opportunities in the energy markets. This is obviously a major focus for the South Carolina Department of Agriculture. Our soybean board is currently involved in a biodiesel promotion in the upstate with a Greenville-based petroleum marketer.

Both E-85 and biodiesel are cleaner burning, making them environmentally friendly. This is certainly a major concern for all of us. With biodiesel, the particulate matter in exhausts is much lower than conventional diesel fuel.

Mitch Perkins, Director of State Energy Programs, and Commissioner Weathers promoting E85 fuel.

Investments in ethanol plants and biodiesel refineries can pump economic life into rural areas where some are struggling. A soybean biodiesel refinery in the lowcountry is near an official announcement and should create forty new jobs in a county with high unemployment. When operating, this facility would create a renewable energy chain of: growing it here * making it here * driving it here.

And our nation's foreign energy dependency is lessened. Your energy dollar is better spent in Aiken or Estill than in Iran. We have links on the Department of Agriculture's web site to let you know the nearly-forty locations in the state where you can purchase E-85 or biodiesel. You will need to verify your car or truck is capable of using it.

I am proud that South Carolina is near the top of a 'good' list. Farmers can grow fuel. Homegrown fuel can help grow South Carolina's economy. With the energy challenge, like many others we face, remember that agriculture is always an answer.

Story reprinted from The State Newspaper Guest Column, July 3, 2006

STREIC Completes Recommendations

Last June, the General Assembly established the Strategic and Tactical Research on Energy Independence Commission (STREIC) for the purpose of considering proposals to enhance the economy of the State, to reduce the adverse consequences of South Carolina's overdependence on petroleum products as fuel for motor vehicles, and to consider the effectiveness of temporary incentives provided in the same legislation. Under the leadership of Chairman Nick Rigas, Director of Clemson's Institute for Energy Studies, the Commission made recommendations designed to encourage the use of alternative fuels for transportation. The recommendations, presented to the Governor and General Assembly in mid-January, call for a package of incentives for biodiesel, ethanol, and plug-in hybrid vehicles, as well as creation of a panel to develop a new comprehensive energy policy for South Carolina. Copies of the full STREIC report are available on the SC Energy Office web site.

ASCEM & SCEO Offer Certified Energy Manager Training

The Association of South Carolina Energy Managers (ASCEM) and the South Carolina Energy Office coordinate Certified Energy Manager (CEM) training classes each July to prepare qualified energy managers for their certification examinations. All individuals wanting to take the CEM training classes must meet the eligibility requirements of AEE and be a member of ASCEM. Information found at http://www.aeecenter.org/ will assist you in qualifying for the course. Because the class sized is limited, those interested should promptly submit information to Leslie J. Walker, Certification Director, at 770-447-5083 ext. 218, or leslie@aeecenter.org.

The Certified Energy Manager program was developed in 1981 by the Association of Energy Engineers. The CEM designation recognizes individuals who have demonstrated high levels of experience, competence, proficiency, and ethical fitness in the energy management profession. The US Department of Energy and the Office of Federal Energy Management Programs, as well as numerous State Energy Offices and major utilities, recognize the CEM designation. It has gained industry-wide acceptance as the standard for qualifying energy professionals in America and abroad. There are over 5000 Certified Energy Managers who serve industry, business, and government in 48 states, including those affiliated with ASCEM.

Visit http://www.energy.sc.gov/Public/ASCEM/CEM.htm to learn more.

Congratulations to South Carolina's Newest Certified Energy Managers!

John Ratterree, Spartanburg School District 5
Larry Free, Dorchester School District 2
Ralph Jenkins, Piedmont Technical College
Scott Orr, Oconee School District J

Left to Right: Ratterree, Free, and Jenkins.

2006 Mark A. Martin ASCEM Scholarship Awarded

The recipient of the 2006 Mark A. Martin ASCEM Scholarship is Ryan Wiggins, son of Ronnie Wiggins of Berkeley School District. Wiggins, who began his first semester at Clemson University during the Fall of 2006, was awarded the $1,000 scholarship because of his outstanding academic and extracurricular qualifications.

The scholarship, designed to assist ASCEM members with the higher education expenses of their family members, is named after long serving member Mark A. Martin, who passed away in 2003. The awarded student must be a graduating senior from a South Carolina high school and must plan to pursue some form of higher education following graduation, including but not limited to a college, university, or technical college. Primary consideration is given to the student's academic efforts, leadership ability, and extracurricular activities, without considering financial need. The scholarship is available to ASCEM members, their spouses, children and grandchildren and staff who work with ASCEM members.

2006 ASCEM Energy Manager of the Year: David Hogge, Berkeley School District

David Hogge has worked with Berkeley County School District for 26 years and was appointed as Energy Manager in 2005. Since then, Hogge has implemented several innovative ideas, such as installing "energy misers" on all vending machines to control the hours during which the machines are lit. The project carried a total estimated cost of $40,000. However, at the district's request, Coca-Cola purchased and installed the devices. Not only did the district save the equipment cost, but an additional $13,000 will be saved each year in reduced energy costs. According to Hogge, "This is a great energy saver! I hope other districts might use timers on their vending machines."

Hogge also spent many hours reviewing energy bills and uncovered an error where the district was being "doubled metered" at one school. As a result, Berkeley County School District received a refund from the utility company for the sum of $120,000. Currently, Hogge is working with the science department to bring an energy conservation program into classrooms.

"David continues to charge ahead in his one-person department," said Ronnie Wiggins, Director of Maintenance, Berkeley County School District. "With very limited resources, David Hogge is making a significant difference."

David Hogge, 2006 ASCEM Energy Manger of the Year

For more information about the vending misers project, or other Berkeley School District projects coordinated by Hogge, contact him at 843-899-8794.

2006 ASCEM Energy Project of the Year: Rock Hill School District 3

Rock Hill School District 3 invested $17.1 million toward an energy project to implement improvements throughout the district, including energy efficient lighting and occupancy sensor controls, domestic water conservation measures, energy management system upgrades, and heating system improvements.

The project was implemented by NORESCO under a guaranteed energy savings performance contract. The district also used CommLogix to link building automation systems throughout the district to provide more streamlined use of the SchoolDude suite of products. Overall, the project provided substantial utility cost savings and maintenance savings from replacement of older equipment, and also improved the learning environment for students and staff.

For more information contact Mike Armour, Rock Hill School District 3 at 803-981-1150.

If you have any questions about ASCEM or would like to attend a future CEM training class, please contact Julia Parris, Secretary of ASCEM, at 803-737-9846.

Columbia or Bust! for the Hybrid Bus

South Carolina's capital city is one of four sites where a hybrid bus, powered by batteries and automotive fuel cells, will be demonstrated. The other cities to be visited by the 37-passenger bus are Birmingham, Ala., and Hartford and New Haven, Conn.

The bus tour is part of the Federal Transit Administration's (FTA) National Fuel Cell Bus Program. The FTA awarded $5.67 million for the project through the Center for Transportation and Environment in Atlanta.

Fuel cells convert hydrogen and oxygen into electricity while emitting only heat and water. The bus will be built from a hybrid composite material and will get about one-third of its power from "super batteries" and the remainder from the fuel cells. Costs to operate the bus are estimated at 42 cents per mile, compared to 69 cents for a conventional diesel-powered bus.

A hybrid bus, like this one in Minneapolis, will soon be rolling down the streets of Columbia!

The project focuses on hydrogen and fuel cell transit bus development and operation, and involves national corporations working in partnership with southern-based businesses, universities, and agencies, including the South Carolina Research Authority (SCRA). "This announcement validates Columbia's growing presence within the national fuel-cell arena," said Bill Mahoney, SCRA president.

The bus is scheduled to be in Birmingham by January 2008, where it will stay for nine months. It will arrive by the time the National Hydrogen Association convenes in Columbia for its annual meeting during the spring of 2009.

BMW Powers Paint Shop with Landfill Gas

These gas turbines at BMW Manufacturing utilize methane gas created at the Palmetto Landfill to help fulfill the plant's energy needs.

This summer, BMW Manufacturing became the first automotive company to fuel a painting facility with green energy, made possible by recycled methane gas generated by Waste Management's Palmetto Landfill near Spartanburg.

BMW is working with long-standing partner Durr Systems of Plymouth, Mich., to modify and upgrade equipment so landfill gas can be used to fuel the paint shop. Durr Systems specializes in developing and implementing energy performance projects in industrial facilities and is a partner in the U.S. Environmental Protections Agency's Landfill Methane Outreach Program.

In 2002, BMW Manufacturing built a 9.5-mile pipeline from the landfill to its facility in Greer to provide approximately 25% of the plant's energy needs. Now, about half of BMW Manufacturing's energy is provided by this renewable resource, saving the company at least $1 million per year in energy costs and reducing area emissions of carbon dioxide by approximately 17,000 tons annually.

Berkeley County Landfill to power new JW Aluminum Smelter

JW Aluminum recently signed a contract with Berkeley County to utilize a readily available source of green power - landfill gas. JW Aluminum will build a new smelter plant powered by methane gas from the Berkeley County landfill. Methane gas is a by-product of decomposing trash and is considered a potent greenhouse gas. However, when burned, this otherwise harmful gas becomes a source of renewable energy. The $5 million project is among the first of its kind in the country according to the U.S. Environmental Protection Agency.

John Clark, director of the South Carolina Energy Office, calls the agreement a win-win for the company and the state. "The JW Aluminum smelter not only means better air quality and a reliable, local source of energy for businesses, but is good news for the state's economy. Instead of purchasing fossil fuels from elsewhere, the company can spend the money it saves here. Giving JW Aluminum a steady supply of natural gas with a stable price… helps their profitability and that profitability helps keep jobs." The county can expect to be paid a quarter million dollars a year for the gas, in addition to applicable property taxes.

Other environmental spin-off projects are also being developed. The county plans to use the heat from the aluminum plant to dry county sewage sludge to sell as fertilizer. Additionally, the county plans to expand its wastewater treatment plant to the landfill where treated water will be sent to Carolina Nurseries for irrigation. Additional methane energy will also power the County Water and Sanitation Authority offices or be sold to other businesses.

Winthrop University Receives Energy Efficiency Award

Energy management efforts at Winthrop University recently earned the school a 2006 Duke Energy Power Partner Award.

In one of Winthrop's latest projects, made possible through a collaboration with Duke Energy and the South Carolina Energy Office, energy solutions were identified that allowed Winthrop to reduce energy costs and increase efficiency by using different fuels to produce steam and by the addition of a new electrode boiler.

According to Walter Hardin, Winthrop's associate vice-president for facilities management, energy conservation is one of the university's top priorities. "Winthrop incorporates energy savings in all of our planning decisions because it is the right thing to do . . . Energy savings, adaptive reuse, recycling and thinking smarter are increasingly more important in our ever changing and growing world."

Duke Energy Power Partner Awards, created in 1993, recognize customers who share Duke Energy's commitment to excellence and implementation of strategic energy solutions.

Conserve energy & Save money. It makes sense! It makes cents!

Personal computers use about the same amount of energy to startup as they use when they are on for about two seconds. For energy savings, consider turning off . . .

1.) the monitor if you aren't going to use your PC for more than 20 minutes.

2.) both the CPU and monitor if you're not going to use your PC for more than 2 hours.

Make sure your computer is on a power strip/surge protector. When the PC is not in use for extended periods, turn off the PC with the switch on the power strip. Even when you turn some PCs off with the switch on the PC itself, it may consume a small amount of power. If you don't use a power strip, unplug the CPU and monitor.

Remember . . . the less time a PC is on, the longer it will "last!"

Information courtesy of the US Deparment of Energy.

February

20: The 2010 Imperative: Global Emergency Teach-In
A free live web-cast from The New York Academy of Sciences
http://www.2010imperative.org/webcast.html

23-25: Home and Outdoor Living Show
Charleston Area Convention Center, North Charleston
http://www.charlestonhomebuilders.org/homeshow/

26-27: Southeast Regional Offshore Wind Power Symposium
Embassy Suites Hotel, Charleston
http://www.clemson.edu/scies/wind.htm

27-28: Green Expo at Clemson University
Madren Conference Center & Hendrix Student Center, Clemson
Contact: Jessica Latour, jlatour@clemson.edu

March

3-7: Tri-Association Facilities Conference**
Sand Dunes Resort, Myrtle Beach
http://www.energy.sc.gov/Public%20Info/training.htm

9-11: Carolina Classic Home & Garden Show
State Fairgrounds, Columbia
http://www.columbiabuilders.com/07homeshow/MAIN.htm

10-14: SchoolDude University 2007
Kingston Plantation, Myrtle Beach
http://marketing.schooldude.com/marketing/sdu/default.asp

Upcoming Energizing Events!

**Tri-Association includes ASCEM (Association of SC Energy Managers), ASPACO (SC Association of State Planning and Construction Officials) and SCAPPA (South Carolina Association of Physical Plant Administrators).

Director John Clark

Editor Whitney Wurzel

South Carolina Energy Office
1201 Main Street, Suite 430
Columbia, South Carolina 29201